

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating

Permit: F-21-002

GE Alstom Power, Inc.

1500 Jamkie Ave.

Erlanger, KY 41018

February 23, 2021

Jonathon Hughes, Reviewer

SOURCE ID: 21-015-00180

AGENCY INTEREST: 49467

ACTIVITY: APE20210001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3443, Fabricated Plate Work and Boiler Shops

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Boone

Nonattainment Area ☐ N/A ☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☒ Ozone ☐ Lead

If yes, list Classification: Marginal

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☐ Yes ☒ No

If yes, for what pollutant(s)?

☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☒ Yes ☐ No

If yes, list which pollutant(s): Toluene, Xylenes, Dibutyl Phthalate, Ethyl Benzene

PTE* greater than 25 tpy for combined HAP ☒ Yes ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

GE Alstom Power, Inc. operates a power plant equipment servicing center. The activities at the service center include metal fabrication, machining operation, surface coating and welding. The potential sources of air emissions at the facility are a paint booth, part washers, and miscellaneous welding and plasma cutting activities.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-21-002

Activities: APE20210001

Received: December 23, 2020

Application Complete Date: January 21, 2021

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☒ Yes ☐ No

APE20170001, Issued 2/7/2017, Addition of Abrasive Blasting Unit

APE20180002, Issued 8/29/2018, Addition of Abrasive Blasting Unit

APE20180004, Issued 12/28/2018, Change of coating materials, correction to abrasive blasting emission limits

Description of Action:

Renewal permit, facility requests no additional construction. Solvent based cleaning equipment subject to 401 KAR 59:185 has been moved from Section C to Section B of the permit for purposes of clarity.

F-21-002 Emission Summary		
Pollutant	2019 Actual (tpy)	PTE F-21-002 (tpy)
PT	0.02	3.08
PM ₁₀	0.02	3.06
PM _{2.5}	0.01	2.53
VOC	1.39	128
Hazardous Air Pollutants (HAPs)		
Chromium Compounds	0.00009	0.0008
Cobalt Compounds	0.0000001	0.000001
Dibutyl Phthalate	0.140	10.3
Ethyl Benzene	0.252	20.4
Manganese	0.00015	0.0007
Nickel Compounds	0.0001	0.0017
Toluene	0.227	76.7
Xylenes	0.515	47.7
Combined HAPs:	1.13	155

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit #01 Paint Booth				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	Source wide 20 tpy	401 KAR 52:030 and preclude 401 KAR 59:225	Material Balance & MSDS	Monthly recordkeeping, 12 month rolling total
HAPs	Source wide 9/20 tpy single/combined	401 KAR 52:030	Material Balance & MSDS	Monthly recordkeeping, 12 month rolling total
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & MSDS with 75% Transfer Efficiency	Fabric Filters, 98% C.E., Manufacturer's guarantee
Opacity	20%	401 KAR 59:010, Section 3(1)	N/A	Weekly Visual Observation

Initial Construction Date: 12/2006

Process Description:

Paint is applied using a high volume low pressure (HVLV) spray gun within the paint booth. 4.69 gal/hr max throughput for coatings, 0.469 gal/hr solvent usage.

Applicable Regulation:

401 KAR 59:010, New process operations, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

401 KAR 63:020, Potentially hazardous matter or toxic substances, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances.

401 KAR 63:002, Section 2(4)(vvvvv) 40 C.F.R. 63.11514 to 63.11523, Tables 1 to 2 (Subpart XXXXXX), National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories. The source opts to comply with the requirements of this subpart for spray painting operations.

Non-applicable Regulation:

401 KAR 63:002, Section 2(4)(iiiiii) 40 C.F.R. 63.11169 to 63.11180, Table 1 (Subpart HHHHHH), National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, is not applicable since the operation is already subject to Subpart XXXXXX.

Precluded Regulations:

401 KAR 59:225, New miscellaneous metal parts and products surface coating operations, is precluded because the source accepted a source wide emission cap for VOCs emission less than or equal to twenty (20) tons per year per Section 6(3) of this regulation.

Emission Unit #01 Paint Booth

401 KAR 63:002, Section 2(4)(rrr) 40 C.F.R. 63.3880 to 63.3981, Tables 1 to 4, and Appendix A (Subpart MMMM), National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products is precluded because the source is taking the source wide emission limits of 9 tons for individual HAP and 20 tons for combined HAPs.

Comments:

The booth is used for refurbishing parts for the utility industry but may be used for other servicing purposes.

The booth's inside working dimensions are 20' wide x 14' high x 30' deep. The booth is equipped with an exhaust system able to produce 23,000 cubic feet per minute exhaust volume at 0.5" static pressure. The exhaust plenum is mounted in a rear arrestor design. Exhaust plenum mounts 20" x 20" x 2" fiberglass arrestor exhaust filter media in forty-two (42) 20" x 20" x 2" filter frames with support grids. This results in a total filter area of approximately 116 square feet. The booth is equipped with one visual draft gauge to measure pressure differential across the arrestor exhaust media, for visual notification on the condition of exhaust filter media and the need to replace the filter media. Control efficient is estimated to be 98 percent for PM/PM₁₀.

No control device is utilized for volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions.

Emission Unit #02 Welding and Metal Cutting Operations				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & MSDS	Dust collector with 99.7% control efficiency
Opacity	Tiered limits in Subpart XXXXXX	40 CFR Part 63, Subpart XXXXXX	N/A	Graduated monitoring specified in Subpart XXXXXX
HAPs	Source wide 9/20 tpy single/combined	401 KAR 52:030	Material Balance & MSDS	Dust collector with 99.7% control efficiency for metal HAPs
<p>Initial Construction Date: 2006</p> <p>Process Description: Includes eight (8) welding machines connected to a dust collector, Plasma/Oxyfuel downdraft metal cutting & welding table with CNC control connected to a dust collector (95% control efficiency) and shop floor welding XX stations.</p> <p>Applicable Regulations: 401 KAR 59:010, New process operations, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975. 401 KAR 63:002, Section 2(4)(vvvvv) 40 C.F.R. 63.11514 to 63.11523, Tables 1 to 2 (Subpart XXXXXX), National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories is applicable since the source SIC code is 3443 and there are emissions of chromium, manganese and nickel compounds.</p> <p>Comments: Eight (8) welding machines Miscellaneous welding emissions are controlled by an Amtech AT-28 cartridge dust collector with 99 percent control efficiency. Emissions from welding are calculated using emission factors for gas metal arc welding (GMAW) from AP-42, Chapter 12, Section 12.19, Tables 12.19-1 and 12.19-2. One (1) Plasma/Oxyfuel downdraft metal cutting & welding table with CNC control Emissions are controlled by a Donaldson MGI-9504409 dust collector with 99.7 percent control efficiency.</p>				

Emission Unit #03 Abrasive Blasting				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & MSDS	Compliance assumed based on rates of emissions
Opacity	20%	401 KAR 59:010, Section 3(1)	N/A	Graduated monitoring specified in Subpart XXXXXX
Initial Construction Date: 2006 Process Description: Abrasive Blasting Room with Modular Dust Collector. Control Efficiency 95%, constructed 2006. Wheelabrator Roto Blaster with Dust Collector. Control Efficiency 99.9%, constructed Jan 2017 Empire Abrasive Blaster with Dust Collector. Control Efficiency 99%, constructed Jan 2018 Applicable Regulations: 401 KAR 59:010 , New process operations, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975. 401 KAR 63:002, Section 2(4)(vvvvv) 40 C.F.R. 63.11514 to 63.11523, Tables 1 to 2 (Subpart XXXXXX), National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories. The source opts to comply with the requirements of this subpart for abrasive blasting operations. Comments: Emission factors supplied by the source.				

Emission Unit #04, 05, Parts Washers				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	Source wide 20 tpy	401 KAR 52:030 and preclude 401 KAR 59:225	Material Balance & MSDS	Monthly recordkeeping, 12 month rolling total
Initial Construction Date: 2006 Process Description: Emission Unit 04 40 Gallon Parts Washer Emission Unit 05 80 Gallon Parts Washer Cold Cleaner Parts Washers using Safety-Kleen solvent Applicable Regulations: 401 KAR 59:185 , New solvent metal cleaning equipment. Comments: Emission factors supplied by the source.				

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

N/A

Footnotes:

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
20 tpy of VOC emissions	401 KAR 52:030, <i>Federally-enforceable permits for nonmajor sources</i> . Also to preclude 401 KAR 59:225	Source-wide
9.0 tpy of individual HAP emissions	To preclude major source status for HAP	Source-wide
20 tpy of combined HAP emissions	To preclude major source status for HAP	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010 , New process operations, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.	01, 02, 03
401 KAR 59:185 , New solvent metal cleaning equipment.	04, 05
401 KAR 63:020 , Potentially hazardous matter or toxic substances, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances.	01
401 KAR 63:002, Section 2(4)(vvvvv) 40 C.F.R. 63.11514 to 63.11523, Tables 1 to 2 (Subpart XXXXXX), National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories.	01, 02, 03

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 59:225, New miscellaneous metal parts and products surface coating operations , is precluded because the source accepted a source wide emission cap for VOCs emission less than or equal to twenty (20) tons per year per Section 6(3) of this regulation.	01
401 KAR 63:002, Section 2(4)(rrr) 40 C.F.R. 63.3880 to 63.3981, Tables 1 to 4, and Appendix A (Subpart MMMM), National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products is precluded because the source is taking the source wide emission limits of 9 tons for individual HAP and 20 tons for combined HAPs.	01

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
401 KAR 63:002, Section 2(4)(iiii) 40 C.F.R. 63.11169 to 63.11180, Table 1 (Subpart HHHHHH), National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, is not applicable since the coatings do not contain MFHAP.	

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*

The Division for Air Quality (Division) has performed SCREEN View on February 23, 2021 of potentially hazardous matter or toxic substances (Toluene, Xylenes, Dibutyl Phthalate, Ethyl Benzene) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-06-043	Initial	APE20060001	7/31/2006	10/4/2006	Initial Construction Permit	N/A
F-11-026	Renewal	APE20110001	4/27/2011	8/25/2011	Renewal	N/A
F-11-026 R1	Admin Amend	APE20120001	2/16/2012	3/5/2012	County Location Change	N/A
F-16-023	Renewal	APE20160001	3/29/2016	6/1/2016	Renewal	N/A
F-16-023 R1	Minor Revision	APE20160003	10/26/2016	12/5/2016	Add MACT 6X	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

N/A

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds